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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	CP-RW-2018-01-16-14 **Date: 18-01-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Ganapathi Badavane 1st main roads & Other cross roads in ward No.14 Bagalagunte.
Agency	:	Technical Manager West, KRIDL, Project Implementation Unit, No.280, 59th Cross, 17th 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560 010.
Customer Reference	:	BBMP/EE/DD/WO/87/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	16-01-18
Sample ID No	:	2018-01-16-14/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	16-01-18

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.4%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.1%	
Combined Flakiness and Elongation Index for WMM	22.5%	

Note:-

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Quality Manager

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2018-01-29-11**
Customer	:	**Date: 31-01-18**
Address	:	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Dasarahalli Sub Division, BBMP, Bangalore.
Agency	:	Improvements to roads and drains at Ganapathi Badavane 1st main roads & Other cross roads in ward No.14 Bagalagunte.
	:	Technical Manager West, KRIDL, Project Implementation Unit, No.280, 59th Cross, 17th 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560 010.
Customer Reference	:	BBMP/EE/DD/WO/87/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-01-18
Sample ID No	:	2018-01-29-11/01
Type of Mix	:	BC-Plant (Bituminous Concrete)
Date of test	:	29-01-18
Oven Dry Weight	:	5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	72	72	1.4	98.6	90-100
9.5	598	670	13.4	86.6	70-88
4.75	898	1568	31.4	68.6	53-71
2.36	701	2269	45.4	54.6	42-58
1.18	512	2781	55.6	44.4	34-48
0.6	482	3263	65.3	34.7	26-38
0.3	598	3861	77.2	22.8	18-28
0.15	428	4289	85.8	14.2	12-20
0.075	298	4587	91.7	8.3	4-10
PAN	413	5000	100	0.0	0

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2018-01-29-11** **Date: 01-02-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Ganapathi Badavane 1st main roads & Other cross roads in ward No.14 Bagalagunte.
Agency	:	Technical Manager West, KRIDL, Project Implementation Unit, No.280, 59th Cross, 17th 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560 010.
Customer Reference	:	BBMP/EE/DD/WO/87/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-01-18
Sample ID No	:	2018-01-29-11/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	29-01-18

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	10.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.2		
Strength	Aggregate Impact Value	22.8	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.62	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

Note:

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2018-01-29-11** **Date: 01-02-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Ganapathi Badavane 1st main roads & Other cross roads in ward No.14 Bagalagunte.
Agency	:	Technical Manager West, KRIDL, Project Implementation Unit, No.280, 59th Cross, 17th 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560 010.
Customer Reference	:	BBMP/EE/DD/WO/87/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	29-01-18
Sample ID No	:	2018-01-29-11/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	29-01-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.98	11.62	10KN(min)
2	Marshal flow at 60°C, mm	3.53	3.54	2-4
3	Percent air Voids	4.78	4.89	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.2	13-15
5	Percent Voids filled with Bitumen(VFB %)	72.48	73.41	65-75
6	Density, g/cc	2.24	2.25	-

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2018-01-29-11**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore. **Date: 01-02-18**
Address	:	Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Ganapathi Badavane 1st main roads & Other cross roads in ward No.14 Bagalagunte.
Agency	:	Technical Manager West, KRIDL, Project Implementation Unit, No.280, 59th Cross, 17th 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560 010.
Customer Reference	:	BBMP/EE/DD/WO/87/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-01-18
Sample ID No	:	2018-01-29-11/01
Type of Mix	:	BC(Bitumenous Concrete)
Date of test	:	29-01-18

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	97.8	Minimum Retained Coating 95%
2	97.0	3.0		
3	98.0	2.0		

Note:
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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS MACADAM

Lab ID	:	**CP-RW-2018-01-22-11** **Date: 25-01-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Ganapathi Badavane 1st main roads & Other cross roads in ward No.14 Bagalagunte.
Agency	:	Technical Manager West, KRIDL, Project Implementation Unit, No.280, 59th Cross, 17th 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560 010.
Customer Reference	:	BBMP/EE/DD/WO/87/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	22-01-18
Sample ID No	:	2018-01-22-11/01
Type of Mix	:	BM (Bituminous Macadam)
Date of test	:	22-01-18

Table 500-6 : Physical Requirements fo Coarse Aggregate for Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.7	Combined Flakiness & Elongation Index for BM is Maximum 35%	IS:2386 Part I
	Elongation Index	10.7		
Strength	Aggregate Impact Value	21.4	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.58	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.19	Maximum 2%	IS:2386 Part III

Note:

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